existing discharge conditions of effluent temperature, salinity, and average and maximum flows. Receiving water properties were characterized by the measurements taken between August 2012 and May 2016 at the City of Oxnard Regional Cooperative Offshore Water Quality Station 4392, at the end of the outfall, for each meter between one and 15 meters. Although the zone of initial dilution was defined in the absence of currents, current speeds were used to ensure models were constructed for the period when the least amount of water was available for dilution. Four model scenarios were completed; one for existing conditions and three for AWPF conditions of increasing brine production and flow diversion, up to a maximum flow of 12.5 MGD of finished recycled water.

Both Exponent and Staff completed several model simulations using another USEPA-approved ocean mixing model, CORMIX, which simulates the mixing of the right and left-directed port jets over the centerline of the outfall, under varying initial conditions. USEPA Region 9 reviewed the work plan and discussed the modeling results prepared by Staff and the City using both Cormix and the Visual Plumes models.

Due to the merging of the discharge plumes above the axis of the diffuser, the Regional Water Board prefer the Cormix model for this outfall. Since the operation of the Advanced Water Purification Facility (AWPF) has still not achieved a steady output of 6.5 MGD and the future flows are still not set, the approved modeling case is the baseline of current OWTP conditions with an initial dilution ratio of 1:108. The evidence supporting the calculated initial dilution ratio of 1:108 using the CORMIX Model, based on the City's dilution modelling data input files was transmitted to the City via email on February 17, 2017 and approved by letter from the Regional Board on June 8, 2017.

Additional modeling runs included 6.25 MGD of brine (Phase I), 9.38 MGD of brine (Phase IA) and 12.5 MGD of brine (Phase II). Once the operation of the AWPF is consistently generating brine, the dilution ratio may be revised upon approval from the Regional Water Board. Any modifications to the IWC due to an adjustment of the dilution ratio would require reopening the permit.

II. FACILITY DESCRIPTION

The Oxnard Wastewater Treatment Plant serves a population of 249,050 in the city of Oxnard, the city of Port Hueneme, the United States Naval Bases in Ventura County, and some unincorporated areas of Ventura County. The City of Port of Hueneme and the United States Navy operate separate collection systems, but each discharge to the City of Oxnard's treatment plant. Flow to the plant consists of domestic, commercial and industrial wastewater. For fiscal year 2017, industrial wastewater represented about 11% (low peak) and 21% (high peak) of the total flow to the Facility.

A. Description of Wastewater and Biosolids Treatment and Controls

The Discharger owns and operates the Oxnard Wastewater Treatment Plant, located at 6001 South Perkins Road in Oxnard, California. The OWTP has a total design treatment flow capacity of 31.7 million gallons per day (MGD) of secondary treated effluent. For the period from August 2013 to December 2017, secondary effluent discharge flow from OWTP averaged 18.5 MGD with a maximum daily flow of 29.8 MGD, as reported to the Regional Water Board[1]. Variations in flow associated with the production of recycled water resulted in

[1] Recycled water production variations, driven by demand and operational limitations, result in daily variations in OWTS discharge flow. As a result, flow measurements given in EPA NPDES application Form 3510-2A, averaged over a short period, vary from that reported to the Regional Water Board, through CIWQS, averaged over longer periods.

wider variation in flow after 2016, with a minimum flow of 9.3 MGD and an average in the last two years of 14.8 MGD.

1. **Preliminary Treatment and Influent Pump Station:** Preliminary treatment at the headworks consists of an inlet junction structure, bar screens, screenings conveyance, grit removal, and grit conveyance. The influent junction box collects flow from the Southeast Interceptor Sewer and the Northwest Interceptor Sewer as well as tank drainage and return flows from the OWTP. From there, flow is routed to a total of six influent screen channels. Four of the screen channels have mechanical bar screens while the remaining two are equipped with manual bar screens. From there, flow is routed to one of two grit chambers to remove grit and other heavy material that is hauled to an offsite landfill for disposal. Finally, flow is gravity fed to the influent pump station wet well. The influent pump station includes six dry pit submersible pumps. During normal operations three of the six pumps are on duty.

2. **Primary Treatment:** Raw wastewater from the headworks flows to three of four primary sedimentation basins for primary treatment. Each sedimentation basin is 105 feet (ft) in diameter and has a designated sludge collector, sludge pump, and surface scum removal mechanism. The primary treatment process includes facilities for adding ferric chloride and polymer to enhance sedimentation. Ferric chloride destabilizes the suspended particles in the primary influent wastewater to promote flocculation. The addition of polymer after floc formation produces a much larger floc, enhancing the settling of suspended solids in the primary clarifiers.

3. **Secondary Treatment:** The secondary treatment system uses a fixed-film secondary treatment process followed by an air-activated sludge process that removes organic material (biochemical oxygen demand or BOD or $BOD_5 20^0C$) from primary effluent. The secondary treatment system is comprised of biotowers, activated sludge tanks (ASTs), and secondary sedimentation basins (SSTs). The primary effluent flows to an interstage pump station where it is pumped by four circulation pumps over the two existing biotowers. Flow is then pumped by three interstage feed pumps to the ASTs. The OWTP has two ASTs that can be operated in a step-feed configuration. Additionally, each AST has three channels that can be run in series or in parallel. Each pass has fixed fine bubble diffusers fed by five single-stage centrifugal blowers. Five centrifugal blowers supply air to the aeration basins to provide oxygen for the activated sludge microorganisms and mixing of the mixed liquor. Air drawn into the blowers is compressed, and then discharged through dedicated headers to the fine bubble diffusers. Each of the three channels in the ASTs is 450 ft long with a surface water depth of 17 feet.

   Flow exiting the ASTs is collected in an effluent channel that flows to the SST inlet channel. This SST inlet channel runs along all eighteen rectangular SSTs to distribute flow. Each SST has plastic flight and chain sludge collectors that send sludge to a centralized return activated sludge (RAS) pump station consisting of a wet well and four mixed flow pumps. Secondary effluent leaving the SSTs flows in the secondary effluent channel that runs along all eighteen SSTs. This secondary effluent then flows by gravity to the Chlorine Contact Tank (CCT) and/or to the Advanced Water Purification Facility (AWPF) lift pump station wet well.

   When flow exiting the SSTs is greater than 50 mgd, a portion of the flow is diverted and flows by gravity to two equalization basins (EQ Basin). Each EQ Basin is 2.5 million gallons. When peak flows subside, secondary effluent stored in the EQ basins is

pumped by three vertical mixed flow pumps out of the basins to the CCTs. The EQ basins are also routinely used to balance daily flow and stabilize effluent pump operation

4. **Effluent Disinfection:** Secondary effluent leaving the SSTs and/or EQ Basin flows by gravity or is pumped through a 48-inch secondary effluent line that discharges to the inlet of the CCT adjacent to the Administration Building. The OWTP has two three-pass CCTs. Each pass is 145 feet long. Chlorination using sodium hypochlorite and dechlorination using sodium bisulfite are the final liquid treatment processes at the OWTP. Chlorine contact tanks slow the flow and allow time for disinfection to occur before the chlorine residual is removed by adding sodium bisulfite solution. The reaction between the chlorine residual and sodium bisulfite is essentially immediate. Sodium hypochlorite is added at the secondary clarifier effluent channel located in the north area process tankage, upstream of the EQ basins. Sodium bisulfite is added to the chlorinated effluent at the CCT discharge end prior to final ocean disposal. Secondary uses for sodium hypochlorite in the plant include odor control at the influent manholes and at the secondary effluent feed tie-in to the AWPF.

5. **Effluent Pump Station and Outfall:** The effluent pump station and outfall dispose treated wastewater to the ocean. The system includes in-plant conveyance piping, a pump station with two engine driven pumps, two electric motor variable frequency drive (VFD) pumps, one additional motor driven pump and an outfall. The two engine driven pumps and two VFD pumps are located at the effluent pump station, while the one motor driven pump is located at the effluent end of the CCT. Typically, the motor driven pump is used during low flow conditions while the engine driven pumps are only used for peak flows.

   The OWTP has a 6,800-foot outfall that was constructed around 1963 and modified in 1978. It discharges OWTP effluent into the Pacific Ocean through multi-port diffusers offshore of Ormond Beach. It has a capacity of 50 mgd.

6. **Oil and Grease Program:** Although the City is no longer providing oil & grease collection services, the City (Source Control) staff still conduct oil & grease inspection for all grease interceptors within the City collection area. Businesses are contracting with private haulers for oil & grease removal.

7. **Solids Handling:** The solids handling facilities at the OWTP consist of two gravity thickeners for primary sludge thickening, two dissolved air flotation thickeners (DAFTs) for waste activated sludge (WAS) thickening, three anaerobic digesters, and four belt filter presses (BFPs) for dewatering. Primary sludge and scum is pumped from the primary clarifiers to the gravity thickeners. The sludge feed is combined at the thickener feed junction box and discharged to the thickener influent well where it is evenly distributed to prevent short circuiting. Polymer is added to this sludge stream. The purpose of the gravity thickeners is to reduce the liquid content in the primary sludge sent to the digesters. WAS from the secondary clarifiers is pumped from the RAS/WAS pump stations to the DAFTs where polymer is used to improve the separation of the solids from the liquid in the WAS flow. The DAFTs utilize fine air bubbles to float the sludge particles to the surface, where it is then scraped off. Volume reduction from WAS thickening benefits the sludge digestion and dewatering processes by reducing the volume of sludge to be processed, quantity of chemicals required for sludge conditioning, and amount of heat required for digestion. The thickened solids are pumped to the digesters. The main purpose of anaerobic digestion is to biologically decompose organic material in primary and secondary scum and sludge to a stable form in compliance with regulatory requirements for final disposal. Anaerobic digestion also reduces the amount of solids to dewater, reduces the volume of sludge cake that is hauled to the landfill,

reduces pathogens in the sludge and produces digester gas that is high in methane and useful for fueling other equipment. The solids dewatering facility consists of the belt filter press (BFP) process in the Solids Processing Building east of the digesters. The BFP system is designed to concentrate the anaerobically digested sludge from a solids content of less than 3 percent to a range of 18 to 20 percent. Polymer is mixed with digested sludge upstream of the BFPs to promote flocculation and solids capture so that the solids will concentrate into cake form. BFP sludge cake is conveyed to hauling trucks for transport to an offsite landfill.

8. **Water Reclamation:** A portion of secondary effluent flows to the AWPF for advanced treatment that includes microfiltration (MF), reverse osmosis (RO), and ultraviolet/advanced oxidation process (UV/AOP). As previously mentioned, the AWPF finished water is produced for reuse and future recharge. Presently, the AWPF has equipment to produce 6.25 mgd of finished water. The MF backwash wastewater is returned to the OWTP's headworks, and the design flow of 1.55 MGD RO brine is commingled with the OTWP's secondary-treated effluent and discharged to the Pacific Ocean.

   Recycled water is currently being distributed for non-potable Title 22 uses, primarily irrigation. The Discharger is seeking approval for a recycled water program that will inject advanced tertiary treated recycled water for later withdrawal and distribution for agricultural, industrial, commercial and domestic uses.

9. **Pretreatment:** The OWTP has an industrial wastewater Pretreatment Program which is approved by USEPA and the Regional Water Board. The City's staff manages a pretreatment program that consists of 654 nondomestic dischargers. Thirty-seven of those dischargers are classified and permitted as Significant Industrial Users (SIU), and 12 of the SIUs are Categorical Industrial Users (CIU). The City also regulates and regularly inspects nonsignificant nondomestic dischargers, including 2 ground water remediation sites, 114 discharging auto shops, and 500 food service establishments. The City issues temporary permits to ground water remediation sites and inspects and samples them annually. The auto shops and restaurants are permitted, inspected, and sampled every 2 years. The City does not accept hauled waste at the publicly owned treatment works.

   Port Hueneme Water Agency (desalter brine), the Naval Base Ventura County Point Mugu, the Nava Base Ventura County Port Hueneme, and the City of Oxnard (desalter brine) all discharge to the City's wastewater treatment plant, and, with the nondomestic dischargers in this jurisdiction, are managed through the City's pretreatment program.

   In October 2017, the City submitted a new local limits study which sets the criteria which industries must meet to ensure water quality objectives will be achieved at the outfall and, especially during the production of recycled water. The document was reviewed by USEPA and approved by the Regional Board on December 14, 2017.

B. Discharge Points and Receiving Waters

1. After chlorination, the secondary treated effluent is routed to a blending manifold and mixed with brine from the AWPF and then is discharged to the Pacific Ocean through the City of Oxnard's Ocean Outfall (Refer to the Flow Schematic, Attachment C).

Table F-2. Outfall Description

Discharge Point Number	001
Diameter of Pipe at Discharge Terminus (feet)	4
Outfall Distance Offshore (feet)	5,950 (including a 1,016-foot diffuser section)

Discharge Point Number	001
Discharge Depth Below Surface Water (feet)	50.5
Latitude	34.1261°
Longitude	-119.1906°

2. The receiving water (Pacific Ocean) off Ormond Beach for the Oxnard WWTP discharge is part of the open coastline of the Regional Water Board-designated Ventura Coastal Watershed Management Area.

C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data.

Effluent limitations contained in the existing Order (Order R4-2013-0094) for discharge from Discharge Point 001 (Monitoring Location EFF-001A and EFF-001B) and representative monitoring data from the term of the previous Order are as follows:

Table F-3. Historic Effluent Limitations and Monitoring Data (Conventional/Non-Conventional Pollutants)

Parameter	Units	Effluent Limitation in Order R4-2013-0094				Monitoring Data (From August 2013 –December 2017[2])		
		Average Monthly	Average Weekly	Maximum Daily	Instan-taneous Maximum	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Biochemical Oxygen Demand ($BOD_5$20°C)	mg/L	30	45	--	--	35	44	93
Total Suspended Solids (TSS)	mg/L	30	45	--	--	8.6	19	38
Oil & Grease	mg/L	25	40		75	5.5	5.5	5.5
Settleable Solids	mL/L	1.0	1.5		3.0	0.1	0.1	0.1
Nitrate-N	mg/L	--	--	--	--	1.9	--	1.9
Nitrite-N	mg/L	--	--	--	--	3.4	--	3.4
pH	pH Unit	6.0 (instantaneous minimum) – 9.0 (instantaneous maximum)				7.4	--	7.7
Temperature	°F	--	--	100	--	79	--	79
Turbidity	NTU	75	100	--	225	6.7	--	34.5

Order No R4-2013-0094 established effluent limitations for toxic pollutants based on water quality objectives in the Ocean Plan. A summary of existing effluent limitations and monitoring data of toxic pollutants for the period from August 2013 to December 2017 is shown below.

[2] Discharger effluent concentration data submitted with supplementary application information may vary from these values, which are calculated from daily data reported to CIWQS, because a shorter sampling period is represented in the Report of Waste Discharge.

Table F-4. Historic Effluent Limitations and Monitoring Data for Toxic Constituents

Parameter	Units	Effluent Limitation Order R4-2013-0094			Monitoring Data (From August 2013 –December 2017)		
		Average Monthly	Maximum Daily	Instan-taneous Maximum	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Arsenic (As)	µg/L	--	--	--	1.6	--	1.6
Cadmium (Cd)	µg/L	--	--	--	<0.5	--	<0.5
Chromium VI(Cr)	µg/L	--	--	--	7.1	--	7.1
Copper (Cu)	µg/L	--	--	--	30	--	30
Lead (Pb)	µg/L	--	--	--	19		19
Mercury (Hg)	µg/L	--	--	--	0.38		0.38
Nickel (Ni)	µg/L	--	--	--	6.6		6.6
Selenium (Se)	µg/L	--	--	--	7.1		7.1
Silver (Ag)	µg/L	--	--	--	2.9		2.9
Zinc (Zn)	µg/L	--	--	--	35		35
Cyanide	µg/L	--	--	--	3.2		3.2
Residual Chlorine	mg/L	--	--	--	0.08		0.08
Ammonia-N	mg/L	--	--	--	49.13		49.13
Chronic Toxicity	TUc	--	99	--	25	--	25
Non-Chlorinated Phenolic Compounds	µg/L	--	--	--	25	--	25
Chlorinated Phenolic Compounds	µg/L	--	--	--	<0.58	--	<0.58
Endosulfan	µg/L	--	--	--	<1.99	--	<1.99
Endrin	µg/L	--	--	--	<0.08	--	<0.08
HCH	µg/L	--	--	--	<0.014	--	<0.014
Radioactivity		--	--	--	<0.05	--	<0.05
Gross alpha	pCi/L	--	15	--	10.2	--	10.2
Gross beta	pCi/L	--	50	--	94	--	94
Combined Radium-226 & Radium-228	pCi/L	--	5.0	--	<0.56		<0.56
Tritium	pCi/L	--	20,000	--	--	--	--
Strontium-90	pCi/L	--	8.0	--	--	--	--
Uranium	pCi/L	--	20	--	--	--	--
Acrolein	µg/L	--	--	--	<2.20	--	<2.20
Antimony	µg/L	--	--	--	5.4	--	5.4

Parameter	Units	Effluent Limitation Order R4-2013-0094			Monitoring Data (From August 2013 –December 2017)		
		Average Monthly	Maximum Daily	Instan-taneous Maximum	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Bis (2-Chloroethoxy) methane	µg/L	--	--	--	<0.25	--	<0.25
Bis (2-Chloroisopropyl) ether	µg/L	--	--	--	<0.38	--	<0.38
Chlorobenzene	µg/L	--	--	--	<0.21	--	<0.21
Chromium III (Cr)(calculated)	µg/L	--	--	--	5.0	--	5.0
Di-n-Butyl Phthalate	µg/L	--	--	--	<0.24	--	<0.24
Dichlorobenzene	µg/L	--	--	--	<1.65	--	<1.65
Diethyl phthalate	µg/L	--	--	--	<0.15	--	<0.15
Dimethyl phthalate	µg/L	--	--	--	<0.18	--	<0.18
4,6-dinitro-2-methylphenol	µg/L	--	--	--	<0.50	--	<0.50
2,4-dinitrophenol	µg/L	--	--	--	<1.60	--	<1.60
Ethylbenzene	µg/L	--	--	--	<0.17	--	<0.17
Fluoranthene	µg/L	--	--	--	<0.22	--	<0.22
Hexachlorocyclo-pentadiene	µg/L	--	--	--	<1.5	--	<1.5
Nitrobenzene	µg/L	--	--	--	<0.36	--	<0.36
Thallium	µg/L	--	--	--	<2.00	--	<2.00
Toluene	µg/L	--	--	--	<0.22	--	<0.22
Tributyltin	µg/L	--	--	--	<0.01	--	<0.01
1,1,1-trichloroethane	µg/L	--	--	--	<0.38	--	<0.38
Acrylonitrile	µg/L	--	--	--	<1.8	--	<1.8
Aldrin	µg/L	--	--	--	<0.0075	--	<0.0075
Benzene	µg/L	--	--	--	<0.23	--	<0.23
Benzidine	µg/L	0.0068	--	--	<4.00	--	<4.00
Berylium (Be)	µg/L	--	--	--	0.6	--	0.6
Bis (2-Chloroethyl) ether	µg/L	--	--	--	<0.27	--	<0.27

Parameter	Units	Effluent Limitation Order R4-2013-0094			Monitoring Data (From August 2013 –December 2017)		
		Average Monthly	Maximum Daily	Instan-taneous Maximum	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Bis(2-ethylhexyl)-phthalate	µg/L	--	--	--	16	--	16
Carbon tetrachloride	µg/L	--	--	--	<0.33	--	<0.33
Chlordane	µg/L	--	--	--	<0.4	--	<0.4
Chlorodibromo-methane	µg/L	--	--	--	<0.38	--	<0.38
Chloroform	µg/L	--	--	--	5.9	--	5.9
DDT	µg/L	--	--	--	<0.19	--	<0.19
1,4-Dichlorobenzene	µg/L	--	--	--	<0.55	--	<0.55
3,3'-dichlorobenzidine	µg/L	--	--	--	<1.2	--	<1.2
1,2-dichloroethane	µg/L	--	--	--	<0.24	--	<0.24
1,1-dichloroethylene	µg/L	--	--	--	<0.39	--	<0.39
Dichlorobromome thane	µg/L	--	--	--	<0.28	--	<0.28
Dichloromethane	µg/L	--	--	--	<0.25	--	<0.25
1,3-dichloropropene	µg/L	--	--	--	<0.26	--	<0.26
Dieldrin	µg/L	--	--	--	<0.01	--	<0.01
2,4-Dinitrotolulene	µg/L	--	--	--	<0.18	--	<0.18
1,2-Diphenyl-hydrazine	µg/L	--	--	--	<0.30	--	<0.30
Halomethanes	µg/L	--	--	--	<1.60	--	<1.60
Heptachlor	µg/L	--	--	--	<0.01	--	<0.01
Heptachlor epoxide	µg/L	0.002	--	--	<0.01	--	<0.01
Hexachloro-benzene	µg/L	--	--	--	<0.49	--	<0.49
Hexachloro-butadiene	µg/L	--	--	--	<0.47	--	<0.47
Hexachloroethane	µg/L	--	--	--	<0.52	--	<0.52
Isophorone	µg/L	--	--	--	<0.21	--	<0.21

Parameter	Units	Effluent Limitation Order R4-2013-0094			Monitoring Data (From August 2013 –December 2017)		
		Average Monthly	Maximum Daily	Instan-taneous Maximum	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
N-Nitrosodi-methylamine	µg/L	--	--	--	<0.14	--	<0.14
N-Nitrosodi-N-propylamine	µg/L	--	--	--	<0.26	--	<0.26
N-Nitrosodi-phenylamine	µg/L	--	--	--	<0.19	--	<0.19
Polycyclic Aromatic Hydrocarbons (PAH)	µg/L	--	--	--	<2.81	--	<2.81
Total Polychlorinated Biphenyls (PCBs)	µg/L	0.019	--	--	<3.5	--	<3.5
TCDD equivalents	µg/L	0.00000039	--	--	<1E-8	--	<1E-8
1,1,2,2-tetrachloroethane	µg/L	--	--	--	<0.18	--	<0.18
Tetrachloro-ethylene	µg/L	--	--	--	<0.27	--	<0.27
Toxaphene	µg/L	--	--	--	<0.6	--	<0.6
Trichloroethylene	µg/L	--	--	--	<0.37	--	<0.37
1,1,2-trichloroethane	µg/L	--	--	--	<0.25	--	<0.25
2,4,6-Trichlorophenol	µg/L	--	--	--	0.74	--	0.74
Vinyl chloride	µg/L	--	--	--	<0.33	--	<0.33

D. Compliance Summary

Effluent violations for biochemical oxygen demand ($BOD_5$20°C) and radioactivity were reported between 2013 and 2017. Violations of the water quality objective are summarized in Table F-5 and a Notice of Violation was given to the Discharger for each. Facility upgrades to prevent future bypasses are described below under section F. Planned Changes.

1. Bypass

Four bypass events were reported to the Regional Water Board in accordance with the requirements of this Order. They are the subject of ongoing enforcement activity.

a. **May 26, 2017:** less than 10 gallons of primary effluent were spilled when the shaft seal of biocirculation pump #1 failed. Sand bags were used to contain the spill, but fluid entered the gutter on Perkins Road where it was removed before it entered any catch basin or body of water.

b. **July 16, 2017:** 325,380 gallons of primary effluent wereas released through the chlorine contact chamber to mingle with fully treated effluent during transport to the ocean outfall diffuser and discharge into the Ocean. The release was attributed to failure of the external power supply, intermittent operation of the emergency standby power generator, and failure of the emergency bypass tank and chlorinator. Flow over the bypass weir fluctuated until power restoration and manual operation of the pump re-established normal operation.

c. **December 4, 2017:** 193,035 gallons of primary effluent were bypassed to the ocean outfall through the chlorine contact chambers. The release was attributed to failure of the external power supply during the high wind event and Thomas Fire, which burned north of the facility, and intermittent operation of the emergency standby power generator. Manual operation of sewer lift stations prevented additional releases in the collection system. Ormond Beach was closed as a preventative measure, but sampling in the vicinity of the outfall did not identify bacteria exceedances.

d. **December 7, 2017:** 22 gallons of final effluent foam left the Final Effluent Pump Station Exhaust fan and entered Perkins Road. Sand bags were used to limit the spill, and the fluids were removed before it entered any catch basin or body of water.

Table F-5. Violations

Violation	Date
Biochemical Oxygen Demand (BOD) (5-day @ 20 Deg. C) Monthly Average limit is 30 mg/L and reported value was 34 mg/L at EFF-001B.	11/30/2016
Biochemical Oxygen Demand (BOD) (5-day @ 20 Deg. C) 30-Day Average limit is 30 mg/L and reported value was 30.6 mg/L at EFF-001B.	10/31/2016
Biochemical Oxygen Demand (BOD) (5-day @ 20 Deg. C) 30-Day Average limit is 30 mg/L and reported value was 35 mg/L at EFF-001B.	5/31/2015
Biochemical Oxygen Demand (BOD) (5-day @ 20 Deg. C) 30-Day Average limit is 30 %mg/l and reported value was 35 %mg/l at EFF-001B.	3/31/2015
Biochemical Oxygen Demand (BOD) (5-day @ 20 Deg. C) 30-Day Average limit is 30 mg/L and reported value was 31 mg/L at EFF-001B.	2/28/2015
Radiation, Gross Beta Daily Maximum limit is 50 PCi/L and reported value was 94 PCi/L at EFF-001A.	8/4/2014

E. Receiving Water Description

The OWTP discharges into the Ocean at a one-mile outfall, which lies south of the towns of Ventura and Port Hueneme, north of Mugu lagoon, and offshore of Ormond Beach. The City has monitored the marine conditions since at least 1999 and has annually described the receiving water. The vicinity of the outfall consists of a silty-sandy plain that is generally uninterrupted between Hueneme and Mugu Submarine Canyons, located upcoast and downcoast, respectively, of the outfall. Fish tissue studies confirmed DDT and PCB are present in some species above method detection limits, especially White Croaker. DDT and PCB concentrations in fish tissue are lower than consumption thresholds and those measured in other parts of Santa Monica Bay. Sediment concentrations of DDT rose from 2005 through 2010, and then decreased to at or below method detection limits in 2012 to 2016. PAH

showed similar variability in sediment sampling. PCB concentrations are below detection in sediment across the study periods.

F. Planned Changes

1. **Wastewater effluent sampling location modification** – In 2015 the City of Oxnard began taking samples at EFF-001B in accordance with the NPDES Permit No. CA0054097, Order No. R4-2013-0094. Previously, effluent samples were taken at the Chlorine Contact Tank Location (EFF-001A). The new effluent sampling location (EFF-001B) consists of a mixing tank where proportionate sample flow from secondary effluent and Reverse Osmosis (RO) concentrate from the Advanced Water Purification Facility (AWPF) are blended. Violations of BOD and elevated bacteria counts have been traced to regrowth in the sample tubing between the last chlorination point in OWTS and the sampling point. Due to this problem, this Order allows a separate sampling point for Biochemical Oxygen Demand, bacteria and TSS, as requested by the Discharger on June 9, 2017, at EFF-001A.
2. **Operation of the Advanced Water Purification Facility (AWPF) –** In 2015, the City began delivering recycled water from its AWPF for recycled uses. Depending on the demand for recycled water, approximately 4 MGD to 16 MGD of secondary effluent is diverted through the AWPF, which is capable of producing up to 12.5 MGD of advanced treated recycled water with a maximum brine flow rate of 3.1 MGD. The future final production of the AWPF is 25 MGD expected to result in commensurate changes in brine production and concentration.
3. **Enhanced primary settling –** Before 2018, Oxnard used polymer to enhance primary settling of solids in the primary clarifiers. Presently, the City has stopped using polymer in the primary clarifiers, but has plans to install permanent polymer equipment as part of the primary clarifier rehabilitation project
4. **Spill Prevention -** The City of Oxnard has experienced spills of primary effluent since 2013. The most recent occurred in December 2017. The following is a list of corrective measures underway to prevent future occurrences:
    a. Operation and Maintenance Activities
        i. One Primary Clarifier will be kept off line and used, if necessary, to hold flow in the event that the interstage pumping system fails.
        ii. The B-2 breaker was re-installed and the co-generator has been made operational.
        iii. Chlorine contact tank (CCT) emergency chlorinator solenoid was replaced.
        iv. Bio-Circulation Pump #1 is being rebuild. Once installed, the pump will be used during Interstage failures.
        v. The power distribution control system installation is complete and the system is operational.
    b. Capital Improvement Activities
        i. The existing main electrical building and switchgears will be replaced through the City's 2-year capital improvements program.

ii. The existing emergency standby generator will be replaced through the City's 5-year capital improvements program.

c. Training Activities

i. Staff are being trained to utilize the influent pump station during loss of inter-stage pumping capabilities.

ii. Staff are being trained to utilize tie-breaker operations during loss of co-generation power production.

iii. Staff are being trained to utilize and follow the City's Primary Effluent Bypass Contingency Plan and Reporting Procedures

A summary of facility improvements is provided in Table F-6.

Table F-6. Planned Changes

Item	Project Schedule
Headworks Odor Control System	2017-2020
Primary Clarifier, Biotowers, Activated Sludge Tank Rehabilitation	2017-2018
Replace Belt Filter Presses and Conveyors	2017-2021
Interstage, Effluent pump rehabilitation	2019-2022
Cogenerators rehabilitations	2017-2020
Plant Motor Control Center/Transformers/Emergency Standby Generator Replacement	2020-2022
Rehabilitate Central Trunk (47), Harbor Blvd (12), Pleasant Valley (14) and Redwood Tributary (38) existing manholes	2018-2020
Install new 24-inch Rice Avenue Sewer	2020-2022

5. **Pretreatment:** On November 17-18, 2014, an explosion and fire at the Santa Clara Waste Water facility, located at 815 Mission Rock Road, resulted in property damage and injury. The facility was permitted by the City of Oxnard under the pretreatment requirements of R4-2013-0094 and the OWTS accepted waste water from the facility for treatment. The City's permit for Santa Clara Waste Water Facility was under review at the time of the accident as an effluent violation for Gross Beta radioactivity was measured on August 4, 2014. The facility was ultimately identified as the source of the radioactive waste, possibly associated with oil field pumping fluids, and the pretreatment permit was revoked. No other violations of water quality objectives were directly related to the operation of the facility. The USEPA coordinated enforcement actions concerning the fire and chemical releases and then led an additional review of the pretreatment program at Oxnard. Pretreatment upgrades include a revision of the Local Limits and Sewer Use Ordinance and adoption of a new Enforcement Response Plan granting additional authority to investigate and respond to instances of industrial user noncompliance. The new ordinance is scheduled to be heard by the City Council in

February 2019. Additional staffing, training, tracking, and permit revision are all underway.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS.

The requirements contained in this Order are based on the requirements and authorities described in this section.

A. Legal Authorities

This Order serves as WDRs pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the USEPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as an NPDES permit authorizing the Discharger to discharge into waters of the United States at the discharge location described in Table 2 subject to the WDRs in this Order.

B. California Environmental Quality Act (CEQA)

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from CEQA. See also *County of Los Angeles v. State Water Resources Control Board (2006) 143 Cal.App.4th 985, 1007.*

C. State and Federal Laws, Regulations, Policies, and Plans

1. **Water Quality Control Plan.** The Regional Water Board adopted a Water Quality Control Plan for the Los Angeles Region (Basin Plan) on June 13, 1994 that has been occasionally amended and designates beneficial uses, establishes water quality objectives (WQOs), establishes prohibitions, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Requirements in this Order implement the Basin Plan including its subsequent amendments. Beneficial uses applicable to the Pacific Ocean are as follows:

Table F-7. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Ormond Beach	Existing: Industrial water supply (IND); navigation (NAV); hydropower generation (POW); water contact recreation (REC-1); non-contact water recreation (REC-2); commercial and sport fishing (COMM); marine habitat (MAR); wildlife habitat (WILD); rare, threatened or endangered species (RARE); and, shellfish harvesting (SHELL). Potential: Spawning, reproduction, and/or early development (SPWN).
001	Pacific Ocean Nearshore	Existing: IND, NAV, REC-1, REC-2, COMM, MAR, WILD, preservation of biological habitats (BIOL), RARE, migration of aquatic organisms (MIGR), SPWN, and SHELL. Potential: None.
001	Pacific Ocean Offshore	Existing: NAV, REC-1, REC-2, COMM, MAR, WILD, RARE, MIGR, SPWN, and SHELL. Potential: None.

2. **Thermal Plan.** The State Water Board adopted the Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan), on January 7, 1971, and amended this plan on September 18, 1975. This plan contains temperature objectives for coastal and inland surface waters. Requirements of this Order implement the Thermal Plan. The limit was changed from maximum daily to instantaneous maximum to comply with the thermal plan.

3. **Ocean Plan.** The State Water Board adopted the Water Quality Control Plan for Ocean Waters of California, California Ocean Plan (Ocean Plan) in 1972 and amended it in 1978, 1983, 1988, 1990, 1997, 2000, 2005, 2009, 2012, and 2015. The State Water Board adopted the latest Ocean Plan amendment, to incorporate a Desalination Amendment, on May 6, 2015, and it became effective on January 28, 2016. The Ocean Plan is applicable, in its entirety, to point source discharges to the ocean. The Ocean Plan identifies beneficial uses of ocean waters of the state to be protected as summarized below.

Table F-8. Ocean Plan Beneficial Uses

Discharge Point	Receiving Water	Beneficial Uses
Outfall 001	Pacific Ocean	Industrial water supply; water contact and non-contact recreation, including aesthetic enjoyment; navigation; commercial and sport fishing; mariculture; rare and endangered species; marine habitat; fish migration; fish spawning; and shellfish harvesting. preservation and enhancement of designated Areas of Special Biological Significance (ASBS)[3].

4. **Santa Monica Bay Restoration Plan.** The OWTP discharges to the Ocean where predominant currents flow south to Santa Monica Bay, one of the most heavily used recreational areas in California. Recognizing the importance of the Bay as a national resource, the State of California and USEPA nominated Santa Monica Bay in the National Estuary Program, and Congress subsequently included Santa Monica Bay in the program. The USEPA, with support from the Santa Monica Bay Restoration Commission, developed the Bay Restoration Plan (BRP), which serves as a blueprint for restoring and enhancing the Bay. The Regional Water Board plays a lead role in the implementation of the BRP. One of the proposed priorities of the BRP are reduction of pollutants of concern at the source (including municipal wastewater treatment plants) and implementation of the mass emission approach for discharges of pollutants to the Bay.

5. **Alaska Rule.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards (WQS) become effective for CWA purposes (40 CFR part 131.21, 65 Federal Register 24641 (April 27, 2000)). Under the revised regulation (also known as the Alaska Rule), new and revised standards submitted to USEPA after May 30, 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and

[3] There is no ASBS designated area in the vicinity of this discharge.

submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.

6. **Stringency of Requirements for Individual Pollutants.** This Order contains restrictions on individual pollutants that are no more stringent than required by the federal CWA and California Ocean Plan. Individual pollutant restrictions consist of technology-based effluent limitations (TBELs) and water quality-based effluent limitations (WQBELs). The TBELs consist of restrictions on $BOD_5$20°C, TSS, pH, and percent removal of $BOD_5$20°C and TSS, which implement the minimum applicable federal technology-based requirements for POTWs. In addition, effluent limitations more stringent than federal technology-based requirements consisting of restrictions on oil and grease, settleable solids, and turbidity are necessary to implement state treatment standards in Table 2 of the Ocean Plan. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. WQBELs for radionuclides, benzidine, PCBs, and TCDD equivalents have been scientifically derived to implement WQOs that protect beneficial uses. Both the beneficial uses and the water quality objectives are approved pursuant to federal law and are the applicable federal water quality standards. All beneficial uses and water quality objectives contained in the Basin Plan and the Ocean Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the CWA" pursuant to 40 CFR part 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

7. **Antidegradation Policy.** Federal regulation 40 CFR section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16 ("Statement of Policy with Respect to Maintaining High Quality of Waters in California"). Resolution 68-16 is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law. Resolution 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. The discharges permitted in this Order are consistent with the antidegradation provisions of 40 CFR § 131.12 and State Water Board Resolution 68-16 and is described in further detail in section IV.D.2. of this Fact Sheet.

8. **Anti-Backsliding Requirements**. Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 CFR section 122.44(l) restrict backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed. The applicability of these requirements to the order is discussed in detail in section IV.D.1. of the Fact Sheet.

   The accompanying monitoring and reporting program requires continued data collection and if monitoring data show reasonable potential for a constituent to cause or contribute to an exceedance of water quality standards, the Order will be reopened to incorporate WQBELs. Such an approach ensures that the discharge will adequately protect water quality standards for designated beneficial uses and conform to antidegradation policies and anti-backsliding provisions.

9. **Endangered Species Act (ESA) Requirements.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now

prohibited, or becomes prohibited in the future, under the California ESA (Fish and Wildlife Code, sections 2050 to 2097). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the state. The Discharger is responsible for meeting all requirements of the applicable ESA.

10. **Monitoring and Reporting**. 40 CFR § 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. CWC sections 13267 and 13383 authorize the Regional Water Board to require technical and monitoring reports. The MRP establishes monitoring and reporting requirements to implement federal and state requirements. This MRP is provided in Attachment E.

11. **Water Recycling.** State Water Board Resolution 2009-0011, Adoption of a Policy for Water Quality Control for Recycled Water (Revised January 22, 2013, effective April 25, 2013) directs the Regional Water Board to encourage recycling. Consistent with this policy, the Discharger shall submit a feasibility report evaluating the feasibility of additional recycling efforts to reduce the amount of treated effluent discharged as authorized in this Order, and a recycled water progress report describing any updates to the development of increased recycled water production and/or distribution. These reports shall be included in the annual report submittal, as described in the monitoring and reporting program (MRP).

12. **Standard and Special Provisions**. Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR § 122.41, and additional conditions applicable to POTWs in accordance with 40 CFR § 122.42, are provided in Attachment D. The Regional Water Board has also included in this Order Special Provisions applicable to the Discharger. The rationale for the Special Provisions contained in this Order is provided in this Fact Sheet.

D. Impaired Water Bodies on the CWA section 303(d) List

The State Water Board proposed the California 2014-162 Integrated Report from a compilation of the adopted Regional Water Boards' Integrated Reports containing CWA section 303(d) List of Impaired Waters and section 305(b) Reports following recommendations from the Regional Water Boards and information solicited from the public and other interested persons. ~~The Regional Water Boards' Integrated Reports were used to revise their 2010 303(d) List. On April 08, 2015, the State Water Board adopted the California 2012 Integrated Report. On July 30, 2015, the USEPA approved California's 2012 Integrated Report Section 303(d) List of Impaired Waters requiring Total Maximum Daily Loads (TMDLs) for the Los Angeles Region.~~ On April 06, 2018, the 2014-2016 Integrated Report Section 303(d) List of Impaired Waters was approved by USEPA. The CWA section 303(d) list can be viewed at the following link:

~~https://www.waterboards.ca.gov/rwqcb5/water_issues/programs/tmdl/integrated2012.shtml#impaired_waters_list/~~

https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml

The Ocean off Ormond Beach is not on the 303(d) list for pollutants/stressors from point and non-point sources. The coast and bay shoreline at Point Mugu Beach and Port Hueneme Beach Park are on the 2014-2016 for indicator bacteria. The back basins in Port Hueneme Harbor are listed for arsenic, DDT, dieldrin, PAH, and PCB and the Port Hueneme Pier is listed for PCBs. The bay and harbor at Ventura Harbor/Ventura Keys are listed for arsenic, coliform and indicator bacteria, dieldrin, and PCBs. The Ventura Marina Jetties, coastal bay and shoreline, are listed for DDT and PCB. The Regional Water Board has adopted a TMDL

to monitor legacy pesticides in McGrath Lake, which can drain into the Ocean north of the outfall under high groundwater conditions.

E. Other Plans, Polices and Regulations

1. **Secondary Treatment Regulations**. 40 CFR § 133 establishes the minimum levels of effluent quality to be achieved by secondary treatment. These limitations, established by USEPA, are incorporated into this Order, except where more stringent limitations are required by other applicable plans, policies, or regulations or to prevent backsliding.

2. **Storm Water.** CWA section 402(p), as amended by the Water Quality Act of 1987, requires NPDES permits for storm water discharges. Pursuant to this requirement, in 1990, USEPA promulgated 40 CFR § 122.26 that established requirements for storm water discharges under an NPDES program. To facilitate compliance with federal regulations, on November 1991, the State Water Board issued a statewide general permit, General NPDES Permit No. CAS000001 and Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities. This permit was amended in September 1992 and reissued on April 17, 1997 in State Water Board Order No. 97-03-DWQ, and superseded by Order No. 2014-0057-DWQ on April 1, 2014 to regulate storm water discharges associated with industrial activity.

   The OWTP is subject to the requirements of California's General Permit for Storm Water Discharges Associated with Industrial Activities NPDES No. CAS000001, Water Quality Order No. 2014-0057-DWQ (Industrial General Permit). The Discharger submitted a Notice of Intent (WDID 4 56I027080) to comply with the requirements of the Industrial General Permit, which became effective July 1, 2015.

   The Discharger developed and currently implements a Storm Water Pollution Prevention Plan (SWPPP) to comply with the requirements of the State Water Board's Industrial General Permit.

3. **Sanitary Sewer Overflows (SSOs).** The CWA prohibits the discharge of pollutants from point sources to surface waters of the United States unless authorized under an NPDES permit. (33 USC sections 1311 and 1342). The State Water Board adopted General WDRs for Sanitary Sewer Systems, (Water Quality Order No. 2006-0003-DWQ; SSO WDR) on May 2, 2006, as amended, to provide a consistent, statewide regulatory approach to address SSOs. The SSO WDR requires public agencies that own or operate sanitary sewer systems with greater than one mile of pipes and sewer lines to apply for coverage under the SSO WDR, develop and implement sewer system management plans, and report all SSOs to the State Water Board's online SSO database. Regardless of the coverage obtained under the SSO WDR, the Discharger's collection system is part of the POTW that is subject to this NPDES permit. As such, pursuant to federal regulations, the Discharger must properly operate and maintain its collection system (40 CFR § 122.41 (e)), report any non-compliance (40 CFR § 122.41(1)(6) and (7)), and mitigate any discharge from the collection system in violation of this NPDES permit (40 CFR § 122.41(d)).

   The requirements contained in this Order sections VII.C.3.b (Spill Cleanup Contingency Plan section), VII.C.4 (Construction, Operation and Maintenance Specifications section), and VII.C.6 (Spill Reporting Requirements section) are intended to be consistent with the requirements of the SSO WDR. The Regional Water Board and USEPA recognizes that there may be some overlap between these NPDES permit provisions and SSO WDR requirements, related to the collection systems. The requirements of the SSO WDR are considered the minimum thresholds (see Finding 11 of State Water Board Order No. 2006-0003-DWQ). To encourage efficiency, the Regional Water Board and USEPA will accept the documentation prepared by the Dischargers under the SSO WDR for

compliance purposes as satisfying the requirements in sections VII.C.3.b, VII.C.4, and VII.C.6, provided the more stringent provisions contained in this NPDES permit are also addressed. Pursuant to SSO WDR, section D, provision 2(iii) and (iv), the provisions of this NPDES permit supersede the SSO WDR, for all purposes, including enforcement, to the extent the requirements may be deemed duplicative.

4. **Pretreatment.** Section 402 of the CWA and implementing regulations at 40 CFR § 403 establish pretreatment requirements for POTWs which receive pollutants from non-domestic users. This Order contains pretreatment program requirements pursuant to 40 CFR § 403 that are applicable to the Discharger.

5. **Sewage Sludge/Biosolids Requirements.** Section 405 of the CWA and implementing regulations at 40 CFR § 503 require that producers of sewage sludge/biosolids meet certain reporting, handling, and use or disposal requirements. The State has not been delegated the authority to implement this program; therefore, USEPA is the implementing agency. This Order contains sewage sludge/biosolids requirements pursuant to 40 CFR § 503 that are applicable to the Discharger.

6. **Watershed Management.** This Regional Water Board has been implementing a Watershed Management Approach (WMA) to address water quality protection in the Los Angeles Region, as detailed in the Watershed Management Initiative (WMI). The WMI is designed to integrate various surface and ground water regulatory programs while promoting cooperative, collaborative efforts within a watershed. It is also designed to focus limited resources on key issues and use sound science. Information about watersheds in the region can be obtained at the Regional Water Board's website at http://www.waterboards.ca.gov/losangeles/water_issues/programs/regional_program/watershed/index.shtml. The WMA emphasizes cooperative relationships between regulatory agencies, the regulated community, environmental groups, and other stakeholders in the watershed to achieve the greatest environmental improvements with the resources available.

   The Regional Water Board has prepared and periodically updates its Watershed Management Initiative Chapter and the latest version was updated AprilDecember 201807. This document contains a summary of the region's approach to watershed management. It addresses each watershed and the associated water quality problems and issues. It describes the background and history of each watershed, current and future activities, and addresses TMDL development. The information can be accessed on the Regional Water Board's website: http://www.waterboards.ca.gov/losangeles.

   This Order and the accompanying Monitoring and Reporting Program (Attachment E) fosters implementation of this approach. The Monitoring and Reporting Program requires the discharger to participate in regional monitoring programs in the Southern California Bight.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATION.

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: 40 CFR section 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 CFR section 122.44(d) requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. Where numeric water quality objectives have not been established, 40 CFR § 122.44(d) specifies that WQBELs may be established using USEPA criteria guidance under CWA section 304(a); proposed State criteria or

a State policy interpreting narrative criteria supplemented with other relevant information may be used; or an indicator parameter may be established.

A. Discharge Prohibitions.

This permit implements discharge prohibitions that are applicable under sections III.I.1.a, III.I.3.a, and III.I.4.a of the California Ocean Plan.

B. Technology-Based Effluent Limitations.

1. Scope and Authority.

Technology-based effluent limitations require a minimum level of treatment for industrial/municipal point sources based on currently available treatment technologies while allowing the Discharger to use any available control techniques to meet the effluent limits. The 1972 CWA required POTWs to meet performance requirements based on available wastewater treatment technology. Section 301 of the CWA established a required performance level--referred to as "secondary treatment" --that all POTWs were required to meet by July 1, 1977. More specifically, section 301(b)(1)(B) of the CWA required that USEPA develop secondary treatment standards for POTWs as defined in section 304(d)(1). Based on this statutory requirement, USEPA developed national secondary treatment regulations which are specified in 40 CFR § 133. These technology- based regulations apply to all POTWs and identify the minimum level of effluent quality to be attained by secondary treatment in terms of $BOD_5$20°C, TSS, and pH.

2. Applicable Technology-Based Effluent Limitations

Section 301(b) of the CWA and implementing USEPA permit regulations at 40 CFR § 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and more stringent effluent limitations necessary to meet minimum federal technology-based requirements based on Secondary Standards at 40 CFR § 133 and Best Professional Judgment (BPJ) in accordance with 40 CFR § 125.3. Secondary treatment is defined in terms of three parameters – $BOD_5$20°C, TSS, and pH.

The following summarizes the technology-based requirements for secondary treatment, which are applicable to the Facility:

Table F-9. Summary of TBELs in 40 CFR part 133.102

Parameter	Units	Effluent Limitations		
		Average Monthly	Average Weekly	Percent Removal [4]
$BOD_5$20°C	mg/L	30 mg/L	45 mg/L	85
TSS	mg/L	30 mg/L	45 mg/L	85
pH	6.0 to 9.0 pH Units			

Also, Table 2 of the 2015 Ocean Plan establishes the following TBELs for POTWs, which are applicable to the Plant:

[4] Percent removal limit does not apply to the AWPF influent.

Table F-10. Summary of TBELs for POTWs established by the 2015 Ocean Plan

Parameter	Units	Effluent Limitations		
		Average Monthly	Average Weekly	Instantaneous Maximum
Oil & Grease	mg/L	25	40	75
TSS	mg/L	[5]		
Settleable Solids	mL/L	1.0	1.5	3.0
Turbidity	NTU	75	100	225
Removal Efficiency for TSS	%	75[5]	--	--
pH	6.0 to 9.0 pH units			

All TBELs from Order No. R4-2013-0094 for $BOD_5 20^oC$, TSS, oil and grease, settleable solids, pH, and turbidity, are retained by this Order. All TBELs are independent of the dilution ratio for the discharge outfall. In addition to the concentration-based effluent limitations, mass-based effluent limitations based on the flow rate of 31.7 MGD used in Order R4-2013-0094, are also included.

The following table summarizes the TBELs for the discharge from the Facility.

Table F-11. Summary of TBELs for Discharge Point 001

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum[6] Daily	Instantaneous Minimum	Instantaneous Maximum[7]
$BOD_5 20^oC$[8]	mg/L	30	45	--	--	--
	lbs/day[9]	7,960	11,900	--	--	--
	% removal	85	--	--	--	--
Total Suspended Solids	mg/L	30	45	--	--	--
	lbs/day[9]	7,960	11,900	--	--	--
	% removal	85	--	--	--	--
	mg/L	25	40		--	75

[5] Dischargers shall, as a 30-day average, remove 75% of TSS from the influent stream before discharging wastewater to the ocean, except that the effluent limitation to be met shall not be lower than 60 mg/L.

[6] The maximum daily effluent limitations shall apply to flow weighted 24-hour composite samples

[7] The instantaneous maximum effluent limitations shall apply to grab samples.

[8] Compliance for BOD percent removal is at EFF-001A. Weekly Average and Monthly may be calculated from daily measurements.

[9] The mass emission rates are based on the design flow of 31.7 MGD, and are calculated as follows: Flow (MGD) x Concentration (mg/L) x 8.34 (conversion factor) = lbs/day. During wet-weather storm events in which the flow exceeds the design capacity, the mass discharge rate limitations shall not apply, and concentration limitations will provide the only applicable effluent limitations.

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum[6] Daily	Instan-taneous Minimum	Instan-taneous Maximum[7]
Oil and Grease	lbs/day[9]	6,630	10,600	--	--	19,900
Settleable Solids	ml/L	1.0	1.5		--	3.0
Turbidity	NTU	75	100	--	--	225
pH	pH unit	Within the limit of 6.0 - 9.0 at all times				

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority.

Section 301(b) of the CWA and 40 CFR § 122.44(d) require that permits include limitations more stringent than applicable technology-based requirements where necessary to achieve water quality standards and State requirements. 40 CFR § 122.44(d)(1)(i) requires that permits include WQBELs for all pollutants which are or may be discharged at levels having the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives or criteria within a standard. USEPA has applied CWA section 403(c) and 40 CFR § 125, Subpart M, following 40 CFR § 122. Where reasonable potential has been established for a pollutant to cause, or contribute to an excursion above a narrative criterion within an applicable State water quality standard, but there is no numeric criterion or objective for the pollutant, water quality-based effluent limitations (WQBELs) must be established using: (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in section 122.44(d)(1)(vi).

The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in other state plans and policies, or any applicable water quality criteria contained in the Ocean Plan.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

The Basin Plan and Ocean Plan establish the beneficial uses and Water Quality Objectives for ocean waters of the State. The beneficial uses of the receiving waters affected by the discharge have been described previously in this Fact Sheet. The Basin Plan contains Water Quality Objectives for bacteria for water bodies designated for water contact recreation and the Ocean Plan contains water quality objectives for bacterial, physical, chemical, and biological characteristics, and radioactivity. The Water Quality Objectives from the Ocean Plan and Basin Plan were incorporated into this Order as either final effluent limitations (based on reasonable potential) or receiving water limitations.

3. Expression of WQBELs

Pursuant to 40 CFR § 122.45(d)(2), for POTW continuous discharges, all permit effluent limitations, standards, and prohibitions, including those necessary to achieve water quality standards, shall, unless impracticable, be stated as average weekly and average monthly discharge limitations. It is impracticable to include only average weekly and average monthly effluent limitations in the Order because a single daily discharge of certain pollutants, in excess amounts, can cause violations of water quality objectives. The effects of pollutants on aquatic organisms are often rapid. For many pollutants, an average weekly or average monthly effluent limitation alone is not sufficiently protective of beneficial uses. As a result, maximum daily effluent limitations, as referenced in 40 CFR § 122.45(d), are included in the Order for certain constituents.

The WQBELs for marine aquatic life toxics contained in this Order are based on Table 1 water quality objectives contained in the 2015 Ocean Plan that are expressed as six-month median, daily maximum, and instantaneous maximum water quality objectives. However, in the existing Order (Order No. R4-2013-0094), the calculated effluent limitations based on 6-month median objectives for marine aquatic life toxics in the 2009 Ocean Plan were prescribed as average monthly limitations. Applying the antibacksliding regulations, this Order retains the same approach and sets effluent limitations derived from six-month median water quality objectives for marine aquatic life toxics in the 2015 Ocean Plan as average monthly limitations. In addition, the 2015 Ocean Plan specifies that for the six-month median for intermittent discharges, the daily value shall be considered to equal zero for days on which no discharge occurred.

4. **Determining the Need for WQBELs**

Order No. R4-2013-0094 contains effluent limitations for the conventional, non-conventional and toxic pollutant parameters in Table 1 of the Ocean Plan. For this Order, the need for effluent limitations based on water quality objectives in Table 1 of the 2015 Ocean Plan was reevaluated in accordance with the Reasonable Potential Analysis (RPA) procedures contained in Appendix VI of the 2015 Ocean Plan. This statistical RPA method (RPcalc version 2.2) accounts for the averaging period of the water quality objective, accounts for and captures the long-term variability of the pollutant in the effluent, accounts for limitations associated with sparse data sets, accounts for uncertainty associated with censored data sets, and assumes a lognormal distribution of the facility-specific effluent data. The program calculates the upper confidence bound (UCB) of an effluent population percentile after complete mixing. In the evaluation employed in this Order, the UCB is calculated as the one-sided, upper 95th percent confidence bound for the 95th percentile of the effluent distribution after complete mixing. The calculated UCB95/95 is then compared to the appropriate objective to determine the potential for an exceedance of that objective and the need for an effluent limitation. For constituents that have an insufficient number of monitoring data or a substantial number of non-detected data with a reporting limit higher than the respective water quality objective, the RPA result is likely to be inconclusive. The Ocean Plan requires that existing effluent limitations for these constituents are retained in the new Order, and the permit shall include a reopener clause to allow for subsequent modification of the permit to include an effluent limitation if monitoring establishes that the discharge causes, has the reasonable potential to cause, or contributes to an excursion above a water quality objective. WQBELs were calculated using monitoring data collected between August 2013 and December 2017~~.~~, and through July 2018 for ammonia, where concentrations are changing more rapidly.

In general, for constituents that have been determined to have no reasonable potential to cause, or contribute to, excursions of water quality objectives, no numerical limits are prescribed; instead a narrative statement to comply with all Ocean Plan requirements is